"Weymouth Pine at Bournemouth" is also misleading. There are very few Weymouth pines (*Pinus strobus*) at Bournemouth, and those on the spot illustrated are almost exclusively *Pinus pinaster*, with a few Scotch pines mixed among them.

W. J. B.

OUR BOOKSHELF.

British Rainfall, 1917: *On the Distribution of Rain in Space and Time over the British Isles during the Year* 1917. By Dr. H. R. Mill and C. Salter. Pp. 240. (London: Edward Stanford, Ltd., 1918.) Price 10*s*.

THIS is the fifty-seventh annual volume of "British Rainfall," and it is an exceedingly creditable piece of work for a private organisation, entirely without State aid. Records are given for upwards of 5000 stations, and every care has been taken to render the monthly and annual maps and tables complete, the curtailment due to the exigencies of the times being in the letterpress.

A small area near the estuary of the Thames had fewer than 150 rain days during the year, while over a large part of Scotland and Ireland, as well as in parts of South Wales and Lancashire, the rain days exceeded 200. Rain spells are given, or periods of more than fourteen consecutive days, every one of which is a rain day, and there is also a summary of droughts. The general rainfall tables afford most valuable information, and, fortunately, the war has caused no break in the publication of the data which have been accumulated now for so many years.

A special article is given on the unprecedented rainfall in the south-west of England on June 28, when 9·56 in. during the twenty-four hours were measured at Bruton, in Somerset. The snowfall of 1917 is dealt with.

The diminution of rainfall with elevation above the ground at Greenwich Observatory is discussed by Mr. W. R. Nash, whose long service at the Royal Observatory adds much to the value of the results. The monthly and yearly values for the several heights carry with them a high degree of exactness. Approximately at 10 ft. above the ground there is a diminution of about 3 per cent., at 22 ft. a diminution of 10 per cent., at 38 ft. a diminution of 20 per cent., and at 50 ft. a diminution of 35 per cent. of the ground rainfall. These results are rather suggestive for aircraft.

C. H.

The Scientists' Reference-Book and Diary, 1919. Pp. 147 + Diary. (Manchester: Jas. Woolley, Sons, and Co., Ltd.) Price 3*s*. 6*d*.

THE physical and chemical constants, together with the scientific and general information contained in the reference-book, will prove of real assistance to the worker in science. The convenient manner in which the data are arranged will make reference easy, and the fact that the book and diary are bound together in a case of a size suitable for the pocket should continue to give the pocket-book a wide popularity.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Climograph Charts.

MY attention has been directed to a note in NATURE of October 17, 1918 (p. 132), on the origin of the chart called a climograph, which gives a graphic representation of the climatic conditions of a locality in the course of the year in respect of warmth and moisture. The paragraph states that the method is due to Dr. Griffith Taylor, of the Meteorological Bureau, Melbourne. I think it should be noted that diagrams of a similar character with the dry bulb, instead of the wet bulb, combined with the relative humidity, were described and illustrated by Dr. John Ball, of the Egyptian Survey Department, eight years ago in the November issue of the *Cairo Scientific Journal*, vol. i., No. 4. We discussed the diagrams at the Meteorological Office early in 1911, when the late Mr. W. Marriott, of the Royal Meteorological Society, produced a number of similar diagrams for English stations, some of which were particularly intriguing, because they failed to distinguish, as we thought they might have done, between places which had the reputation of being bracing on one hand, and relaxing on the other.

The subject was further pursued in a paper by Dr. Ball and Mr. J. I. Craig, read at the meeting of the British Association at Portsmouth in 1911. Mr. Craig, in reading the paper, exhibited slides representing on that plan a variety of climates, such as unhealthy climates, continental and marine climates, London, the cotton lands, the monsoon, the influence of altitude, dry health resorts as compared with London, Toronto as compared with Davos, and various climates of the United States. These graphs differ from those afterwards prepared as climographs by Dr. Griffith Taylor in having the dry bulb instead of the wet bulb, and the alteration, for the most part, makes little difference to the general appearance of the diagram, though it alters its position on the sheet.

As a matter of fact, neither form of diagram seems to be completely satisfying as distinguishing between the comfortable, the tolerable, and the unendurable in climate. Some years ago Mr. W. F. Tyler, of the Chinese Customs Service, pointed out that between limits of temperature, say 55° F. and 65° F., nobody minded much what the humidity was; but outside these limits of the "generally comfortable" there was a range of temperatures of the "just tolerable" order for damp air, which soon got to the "unendurable" on the side of higher temperature. Beyond these, again, is a range of temperatures under which life is possible only in dry air. An effective climatic diagram would in some way or other exhibit the relation of the climate to the ranges compatible with comfort, life, and death.

NAPIER SHAW.

Meteorological Office, South Kensington,
London, S.W.7, January 1.

A University Association.

PROF. ARMSTRONG'S letter in NATURE of January 2 has just come to my notice, and as chairman of the Conference of University Lecturers, to which reference was made in these columns under the "University and Educational Intelligence" of December 12, I hasten

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to accord my hearty agreement with his timely protest against the advertising of a chair of chemistry at King's College, London, at the "princely salary" of 600*l*. a year.

Prof. Armstrong hopes that the profession will make no response. There is, however, little doubt that there will be a quite substantial competition for the post among the best of our chemical lecturers. The reason is, of course, that 600*l*. does appear to the university lecturer a princely plum worth scrambling for; it means for him at one jump an increase to from two to three times his present salary, and he knows that as the number of such relatively well-paid posts is much smaller than the number of lecturers, it is his duty to his dependents to leave no chance untried.

That I am not drawing an exaggerated picture will be evident from a consideration of the following average salaries of non-professorial teachers, calculated from data which I have before me, derived from fifteen universities and university colleges:—

Service year	Number of lecturers	Average salary £
1–5	119	171
6–10	85	193
11–15	77	253
16–20	30	239
21–25	11	263
26–30	4	297
31–35	3	273

The professorial view of a salary of 600*l*. is another matter. What the gentleman appointed to the chair at King's College will think a few years hence is also another matter.

The preliminary to any effort to maintain a reasonable professorial scale of remuneration by the abstention of lecturers from competing for what are for them really well-paid posts is to ensure the lecturer a reasonable living wage. And this, too, is Prof. Armstrong's solution put in rather different form. Why not call the post a lectureship? A glance at the above table will show that to abstain from competing for a 600*l*. post, simply because it is called a professorship, in, say, one's twelfth year of service, is a risk too grave to be taken.

The Scottish lecturers have been recently granted a graded scale rising to 750*l*. This is in line with the revised scheme of remuneration for the scientific staff of the National Physical Laboratory, as follows:—

	Min. £	Yearly increase £	Max. £
Superintendents	800	50	1000
Principal assistants ...	650	25	750
Senior assistants	500	25	600
Assistants, I.	350	20	450
Assistants, II.	250	20	350
Junior assistants	175	15	235

In regard to abstention, another and very vital difficulty arises. How is a lecturer to know what his colleagues will do? He may by abstaining cut his own throat without achieving any reform. Both professors and lecturers are in a dilemma. What is to be done? The answer is perfectly clear. We university teachers should have an association which would do for us, or enable us to do for ourselves, what the Medical Association does for the doctors. This is a perfectly practical suggestion. It may be taken as certain that in the course of evolution such an association is destined to come. What is to prevent it from being an accomplished fact within six months from to-day?

R. DOUGLAS LAURIE.

University College of Wales, Aberystwyth,
January 9.

Airy and the Figure of the Earth.

I SHOULD be very much obliged if any reader of NATURE would kindly give me an answer to the following question:—

In a note on p. 371 of the second volume of the treatise on "Natural Philosophy," by Thomson and Tait, I read: "Airy has estimated 24 ft. as the greatest deviation of the bounding surface from the true ellipsoid" Where did Airy give the result 24 ft.?

Darwin ("Scientific Papers," vol. iii., p. 78) writes: "Airy further concluded that the earth's surface must be depressed below the level of the true ellipsoid in middle latitudes. He gave no numerical estimate of this depression, but expressed the opinion that it must be very small."

It is curious to remark that Todhunter, in his "History of the Theory of Attraction, etc.," made no mention of the paper by Airy on the figure of the earth printed in the third part of the Philosophical Transactions of the Royal Society for the year 1826, which is the paper alluded to in the above quotation from Darwin.

OTTAVIO ZANOTTI BIANCO
(Docent of Geodesy in the R. University of Turin).

Torino (Italy), Via della Rocca 28,
November 28, 1918.

I HAVE carefully examined the curious points raised by Sig. Bianco, and cannot find any satisfactory answer to the questions asked.

Thomson and Tait's footnote, in which it is stated that Airy "estimated 24 ft. as the greatest deviation of the bounding surface from the true ellipsoid," occurs also in the first edition of the "Natural Philosophy." It is true, in a sense, that Airy gave in his published paper no distinct numerical estimate of this deviation. Nevertheless, in his discussion of Sabine's pendulum observations, he compared the coefficients of certain terms with the corresponding values in terms of e and A as given in his theoretical formulæ. The value of A so found (see Phil. Trans., vol. cxvi., p. 366) is 0·000064. In latitude 45° the deviation is $a\mathrm{A}\times\frac{1}{2}\times\frac{1}{2}$, and this is 334 ft., and not 24 ft., as Thomson and Tait give it.

The only other possible explanation is that Airy had communicated a later estimate privately to Thomson, for it is quite conceivable that Airy may have made an estimate which he never published. I can find no other publication of his in which this estimate is given or from which it may be derived.

In the days in which Thomson and Tait were writing their book—*i.e.* in the "sixties" of last century—Thomson was much interested in the figure of the earth, and he was almost certain to be in touch with Airy.

Personally, I never thought of questioning the accuracy of the footnote. Sir George Darwin read the proof-sheets of the second edition and wrote a number of sections. He let it pass, although in his own writings he says that Airy gave no estimate. This, however, is not quite correct.

I can throw no further light on it. Possibly a better series of pendulum observations than those given by Sabine might lead to the result 24 ft. But that is rather a wild speculation.

C. G. KNOTT.

Some Temperature Anomalies.

I HAVE often noticed the anomalies of temperature to which Mr. Harries directs attention in NATURE of January 9, and have sometimes been inclined to ascribe the high temperature in the east to air that

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